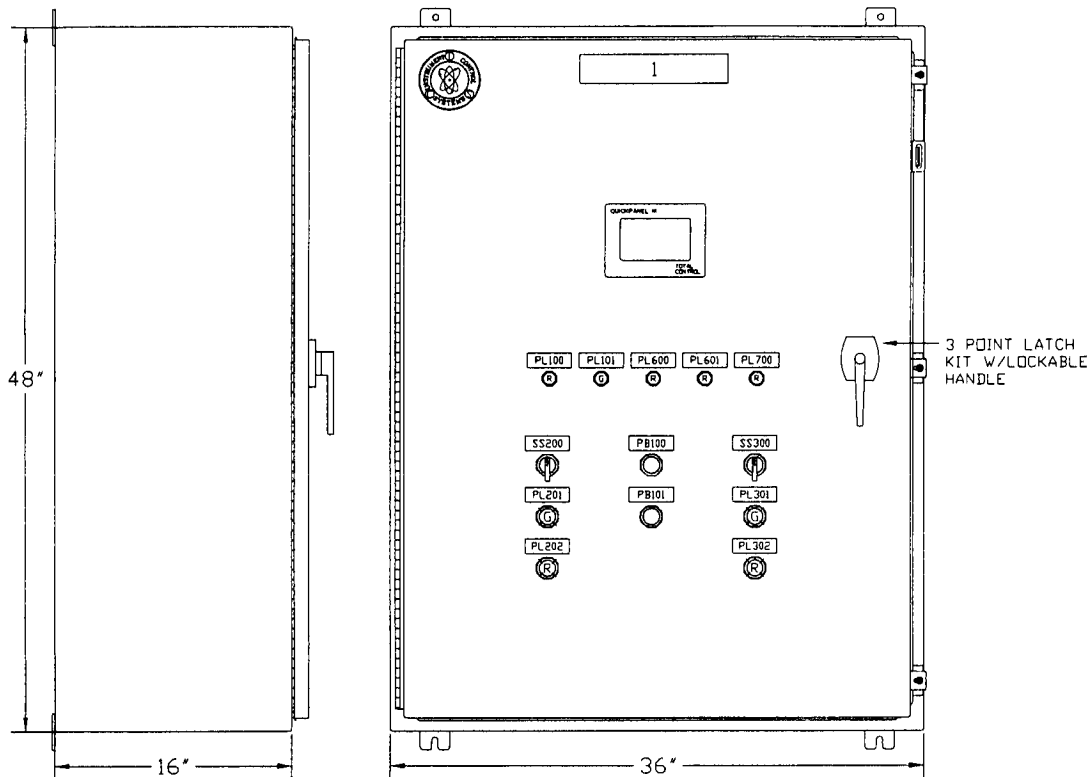


ATTACHMENT D

EXISTING CITY PUMPING CONTROL SYSTEMS

- I. B.** Drawings contained in this attachment are typical equipment configuration drawings from the City of East Grand Forks. Typical equipment configuration drawings from the City of Grand Forks are provided in a separate file attached to the solicitation, filename: "GFsysAttD.pdf".

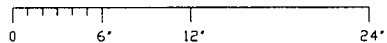


NAMEPLATE SCHEDULE					
TAG	LINE1	LINE2	LINE3	SIZE	REMARKS
1	STORM WATER STATION	CONTROL PANEL		1.5X10	
PB100	LAMP TEST			1X3	YELLOW INSERT
PB101	RESET			1X3	BLACK INSERT
PL100	PHASE FAIL			1X3	
PL101	PROCESSOR RUNNING			1X3	
PL201	PUMP NO.1	RUNNING		1X3	
PL202	PUMP NO.1	OVERTEMP		1X3	
PL301	PUMP NO.2	RUNNING		1X3	
PL302	PUMP NO.2	OVERTEMP		1X3	
PL600	HIGH WETWELL	LEVEL ALARM		1X3	
PL601	LOW WETWELL	LEVEL ALARM		1X3	
PL700	DRYWELL FLOODED ALARM			1X3	
SS200	PUMP NO.1	HAND - OFF - AUTO		1X3	
SS300	PUMP NO.2	HAND - OFF - AUTO		1X3	

NOTES:

- ENCLOSURE IS A NEMA TYPE 4/12 WALL-MOUNT HOFFMAN A-483612LP WITH INNER PANEL HOFFMAN A-48P36.
- FINISH IS ANSI 61 GRAY.
- UL 508#

SCALE



DATE LAST EDITED: 09/21/00

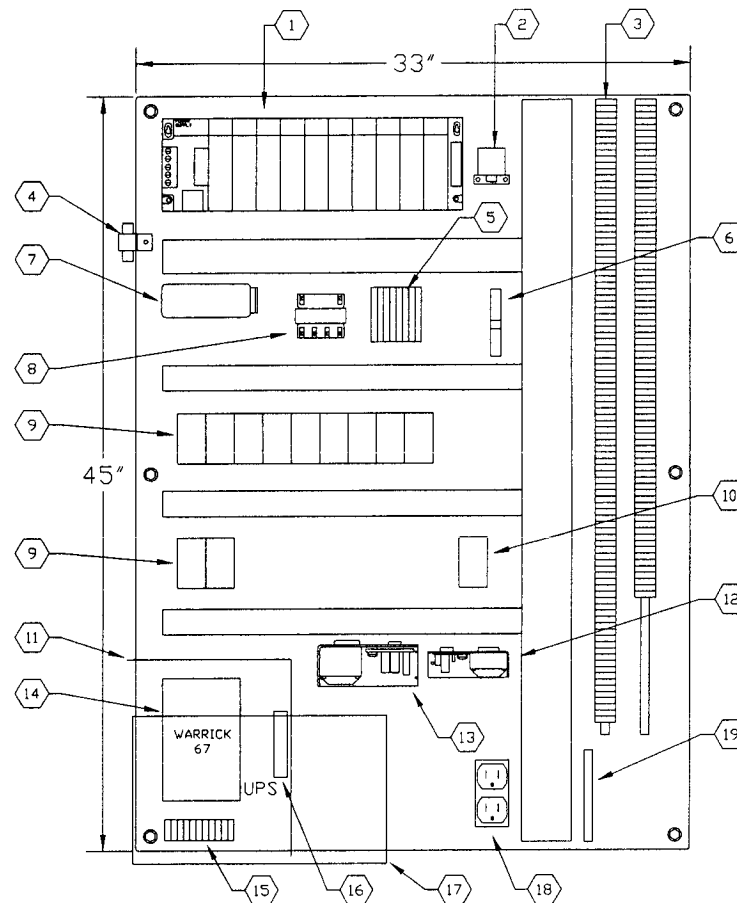
REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD	GK
ENGR.	JL
ASSEM	
SHEET	DF

PROJECT	
EAST GRAND FORKS, ND US CORP.	
STORM WATER STATION	
CONTROL PANEL	
ENCLOSURE DETAIL	
PROJ. NO.	1225A
DWG. NO.	001

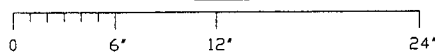


PART LIST

1. PLC RACK
2. LIGHTNING ARRESTOR
3. TERMINALS
4. ANTENNA LIGHTNING ARRESTOR
5. FUSES
6. CIRCUIT BREAKER
7. RADIO / MODEM
8. TRANSFORMER
9. RELAYS
10. TIMERS
11. ALUMINUM SHIELD
12. POWER SUPPLY 24VDC
13. POWER SUPPLY 12VDC
14. DIGITAL I.S. BARRIER
15. I.S. TERMINALS
16. ANALOG I.S. BARRIER
17. UNINTERRUPTIBLE POWER SUPPLY
18. UPS RECEPTACLE
19. GROUND BAR

PANEL LAYOUT

SCALE



DATE LAST EDITED: 09/21/00

DATE	REVISION	DESCRIPTION

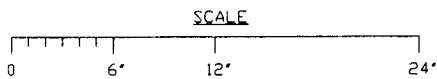
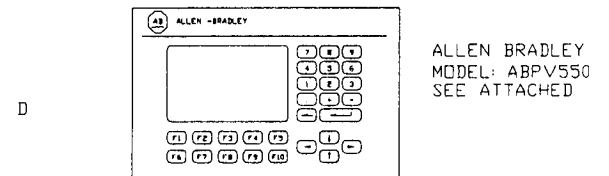
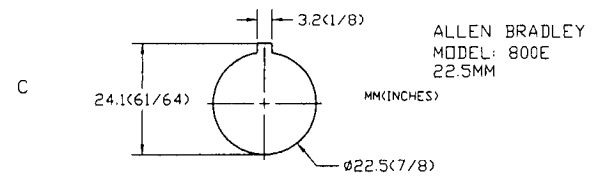
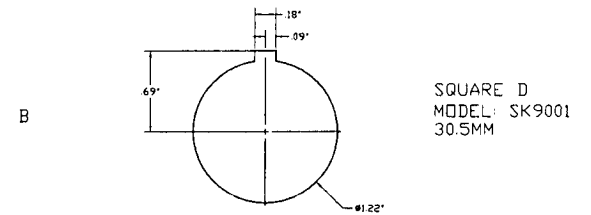
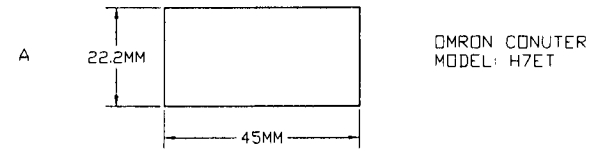
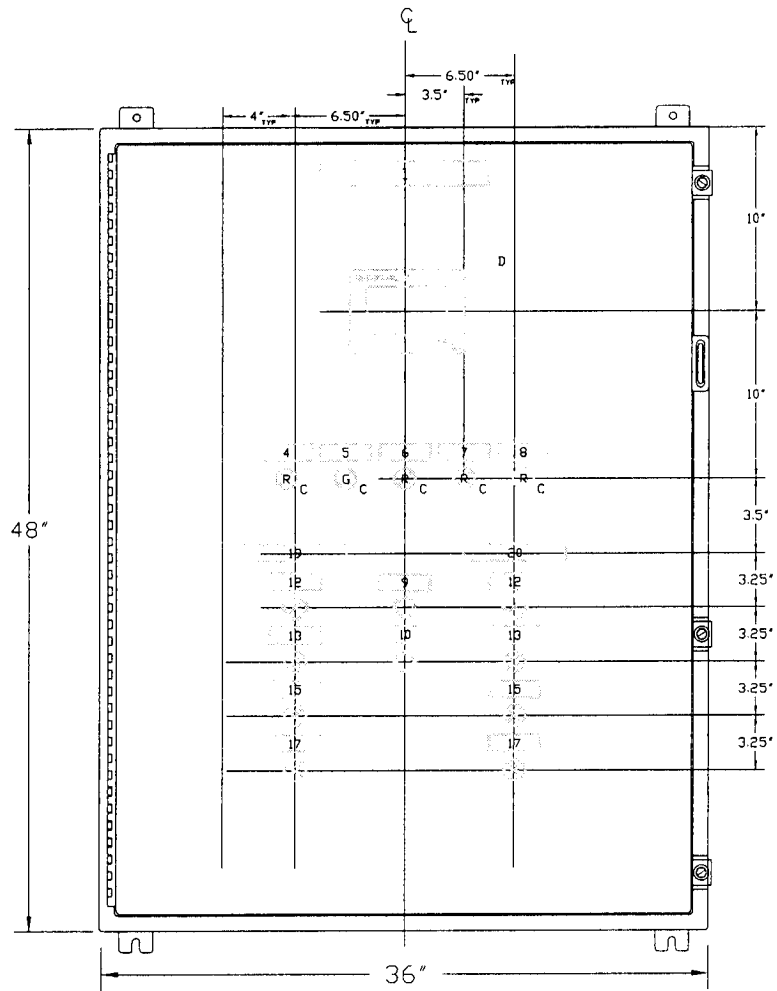


INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
PANEL LAYOUT

PROJ. NO. 1225A
DWG. NO. 002



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION

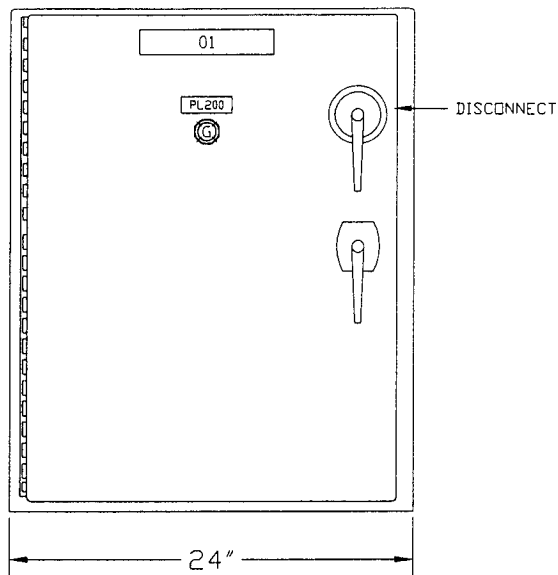
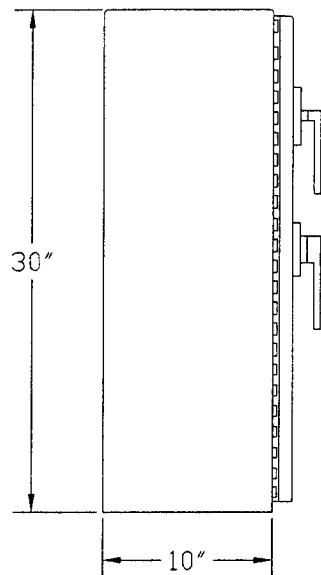


INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHK	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT EAST GRAND FORKS, ND US CORP
STORM WATER STATION
CONTROL PANEL
PRODUCTION DETAIL

PROJ. NO.
1225A
DWG. NO.
003

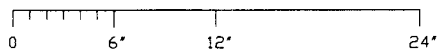


NAMEPLATE SCHEDULE					
TAG	LINE1	LINE2	LINE3	SIZE	REMARKS
01	PUMP NO.1 SMC			1.5x8	
PL200	RUN			1X3	

NOTES:

1. ENCLOSURE IS NEMA 1, CUSTOM
2. GALVANIZED BACKPANEL
3. 3 PT LATCH
4. COLOR IS ANSI 61 GRAY
5. INTERLOCKING CIRCUIT BREAKER/DISCONNECT
6. REFER TO DWG. 1065B-102 FOR WIRING DETAIL
7. UL 508#

SCALE



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION

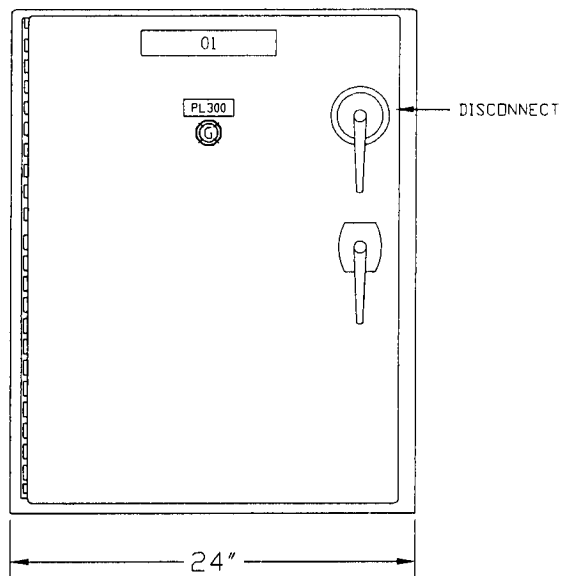
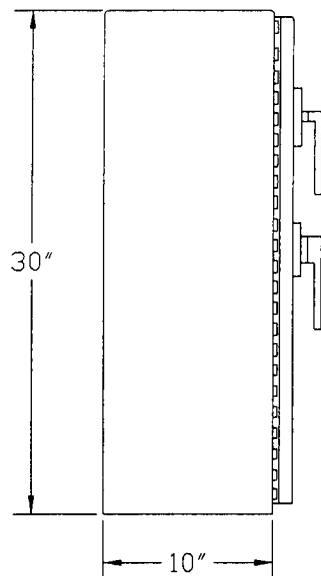


INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
PUMP NO.1
SMC ENCLOSURE DETAIL

PROJ. NO.
1225A1
DWG. NO.
004

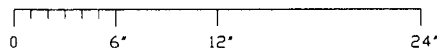


NAMEPLATE SCHEDULE				
TAG	LINE1	LINE2	LINE3	SIZE
01	PUMP NO.2 SMC			1.5x8
PL300	RUN			1X3

NOTES:

1. ENCLOSURE IS NEMA 1, CUSTOM
2. GALVANIZED BACKPANEL
3. 3 PT LATCH
4. COLOR IS ANSI 61 GRAY
5. INTERLOCKING CIRCUIT BREAKER/DISCONNECT
6. REFER TO DWG. 1065B-102 FOR WIRING DETAIL
7. UL 508#

SCALE



DATE LAST EDITED: 09/21/00

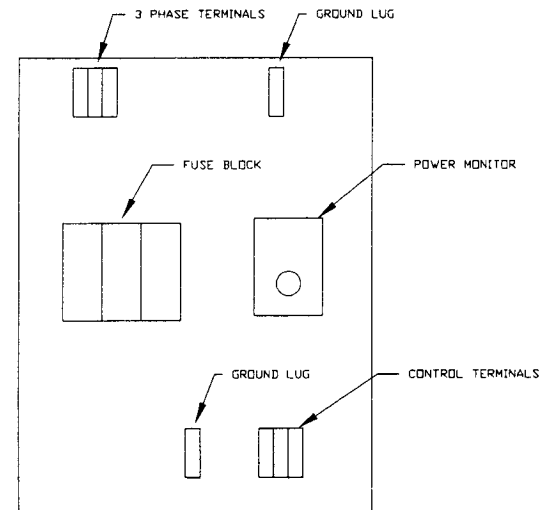
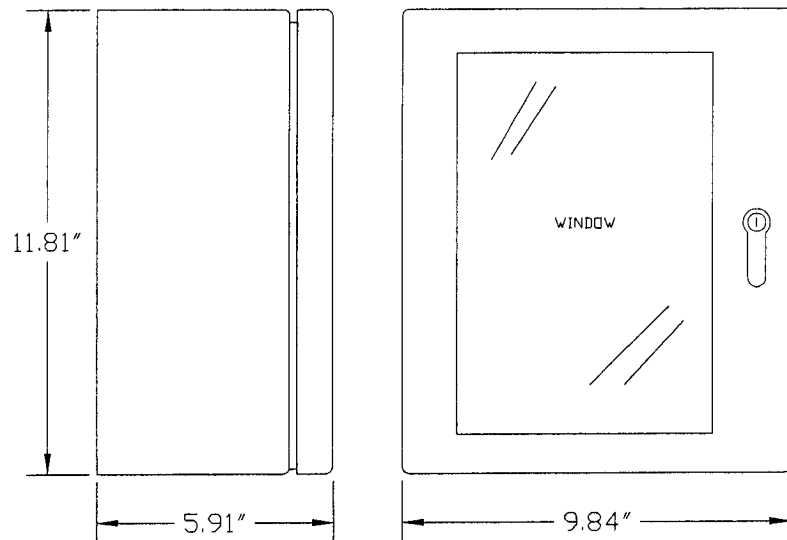
REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00	PROJECT	EAST GRAND FORKS, ND US CORP.
DWN	JA		
CKD	GK		
ENGR	JL		
ASSED			
SHEET	OF		

PROJ. NO.
1225A2
DWG. NO.
005

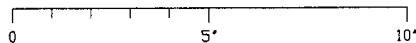


PANEL LAYOUT

NOTES:

1. ENCLOSURE IS A NEMA TYPE 4 HOFFMAN L-WC302515 WITH INNER PANEL L-P3025
2. FINISH IS TEXTURED LIGHT GRAY (RAL 7035)
3. REFER TO DWG. 1169B-101
4. UL 508#

SCALE



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION



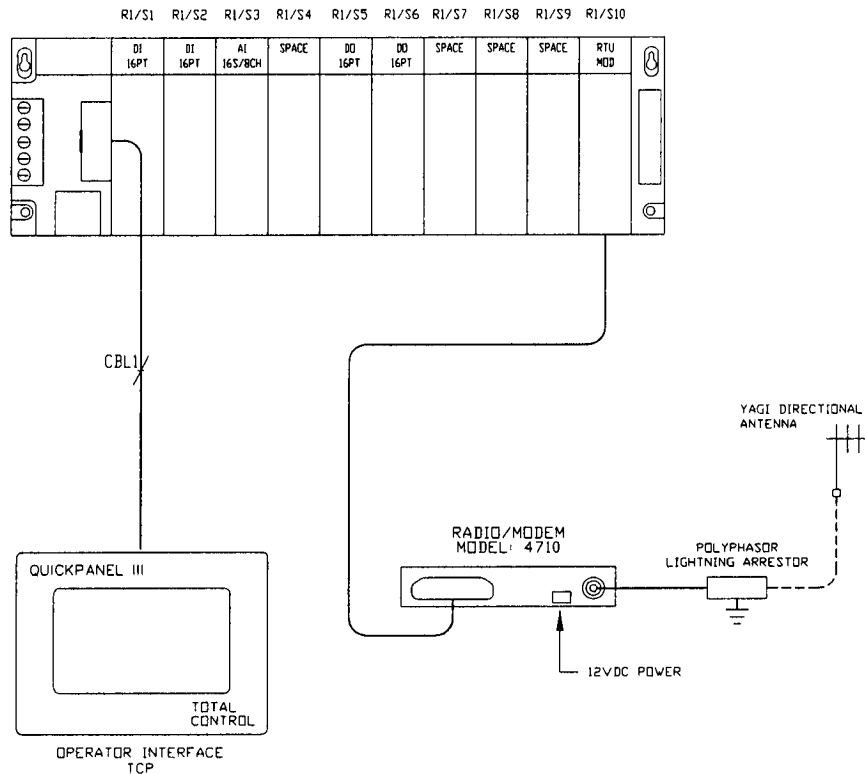
INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT	EAST GRAND FORKS, ND US CORP
STORM WATER STATION	
POWER MONITOR	
ENCLOSURE DETAIL	

PROJ. NO.	1225A3
DWG. NO.	056

SERIES 90-30 PLC I/O SCHEDULE



QTY	TAGS	DESCRIPTION	MFG	CATALOG
1	R1	PLC RACK 10 SLOT BASE RACK WITH TURBO CPU (12K MEM)	GE	IC693CPU323
2	R1/S1 R1/S2	PLC DIGITAL I/O MODULE 16 POINT INPUT 120V AC PLC I/O	GE	IC693MDL240
1	R1/S3	PLC ANALOG I/O MODULE 16 SINGLE / 8CH ANALOG INPUT VOLTAGE	GE	IC693ALG222
4	R1/S4 R1/S7 R1/S8 R1/S9	SPACE	N/A	
1	R1/S10	PLC COMM MODULE MODBUS COMMUNICATION MODULE	GE	HE693RTU900
1	CBL1	SERIAL COMMUNICATIONS CABLE RS232/485 SERIAL COMMUNICATIONS	TC	HMI-CAB-CS2
2	R1/S5 R1/S6	PLC DIGITAL I/O MODULE 16 POINT RELAY OUT, N.O., 2A PLC I/O	GE	IC693MDL940

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13003 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	07

PROJECT EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
PLC I/O SCHEDULE

PROJ. NO.
1225A
DWG. NO.
007

* DIGITAL INPUT/OUTPUT STATUS LIGHT
SHOWN AS NORMAL STATE ☒ ON ☐ OFF

DIGITAL INPUT			DIGITAL INPUT			ANALOG INPUT			SPACE		
DI		SLOT 1	DI		SLOT 2			SLOT 3			SLOT 4
0	<input type="radio"/>	PHASE FAIL	0	<input type="radio"/>	SPARE			0			WETWELL LEVEL 0-__FT
1	<input type="radio"/>	LAMP TEST	1	<input type="radio"/>	SPARE			1			SPARE
2	<input type="radio"/>	RESET	2	<input type="radio"/>	SPARE			2			SPARE
3	<input type="radio"/>	POWER FAIL	3	<input type="radio"/>	SPARE			3			SPARE
4	<input type="radio"/>	PUMP 1 IN AUTO	4	<input type="radio"/>	SPARE						
5	<input type="radio"/>	PUMP 1 RUNNING	5	<input type="radio"/>	SPARE						
6	<input type="radio"/>	PUMP 1 OVERLOAD TRIP	6	<input type="radio"/>	LOW LEVEL ALARM						
7	<input type="radio"/>	PUMP 1 OVERTEMP	7	<input type="radio"/>	HIGH LEVEL ALARM						
8	<input type="radio"/>	PUMP 2 IN AUTO	8	<input type="radio"/>	INTRUSION ALARM						
9	<input type="radio"/>	PUMP 2 RUNNING	9	<input type="radio"/>	DRYWELL FLOODED						
10	<input type="radio"/>	PUMP 2 OVERLOAD TRIP	10	<input type="radio"/>	SPARE						
11	<input type="radio"/>	PUMP 2 OVERTEMP	11	<input type="radio"/>	SPARE						
12	<input type="radio"/>	SPARE	12	<input type="radio"/>	SPARE						
13	<input type="radio"/>	SPARE	13	<input type="radio"/>	SPARE						
14	<input type="radio"/>	SPARE	14	<input type="radio"/>	SPARE						
15	<input type="radio"/>	SPARE	15	<input type="radio"/>	SPARE						

DIGITAL OUTPUT			DIGITAL OUTPUT			SPACE			SPACE		
DO		SLOT 5	DO		SLOT 6			SLOT 7			SLOT 8
0	<input type="radio"/>	PHASE FAIL	0	<input type="radio"/>	WETWELL HIGH LEVEL						
1	<input type="radio"/>	PROCESSOR RUN	1	<input type="radio"/>	WETWELL LOW LEVEL						
2	<input type="radio"/>	PUMP 1 REQUIRED	2	<input type="radio"/>	DRYWELL FLOODED						
3	<input type="radio"/>	PUMP 1 RUNNING	3	<input type="radio"/>	SPARE						
4	<input type="radio"/>	PUMP 1 OVERTEMP	4	<input type="radio"/>	SPARE						
5	<input type="radio"/>	PUMP 2 REQUIRED	5	<input type="radio"/>	SPARE						
6	<input type="radio"/>	PUMP 2 RUNNING	6	<input type="radio"/>	SPARE						
7	<input type="radio"/>	PUMP 2 OVERTEMP	7	<input type="radio"/>	SPARE						
8	<input type="radio"/>	SPARE	8	<input type="radio"/>	SPARE						
9	<input type="radio"/>	SPARE	9	<input type="radio"/>	SPARE						
10	<input type="radio"/>	SPARE	10	<input type="radio"/>	SPARE						
11	<input type="radio"/>	SPARE	11	<input type="radio"/>	SPARE						
12	<input type="radio"/>	SPARE	12	<input type="radio"/>	SPARE						
13	<input type="radio"/>	SPARE	13	<input type="radio"/>	SPARE						
14	<input type="radio"/>	SPARE	14	<input type="radio"/>	SPARE						
15	<input type="radio"/>	SPARE	15	<input type="radio"/>	SPARE						

* OPEN = STATE NO/NC?
? = POSSIBLE STATE CONFLICT

NOTE(S):

- * 1. NORMAL STATE:
SYSTEM READY IN AUTOMATIC MODE
PUMPS NOT RUNNING
NO ALARMS

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

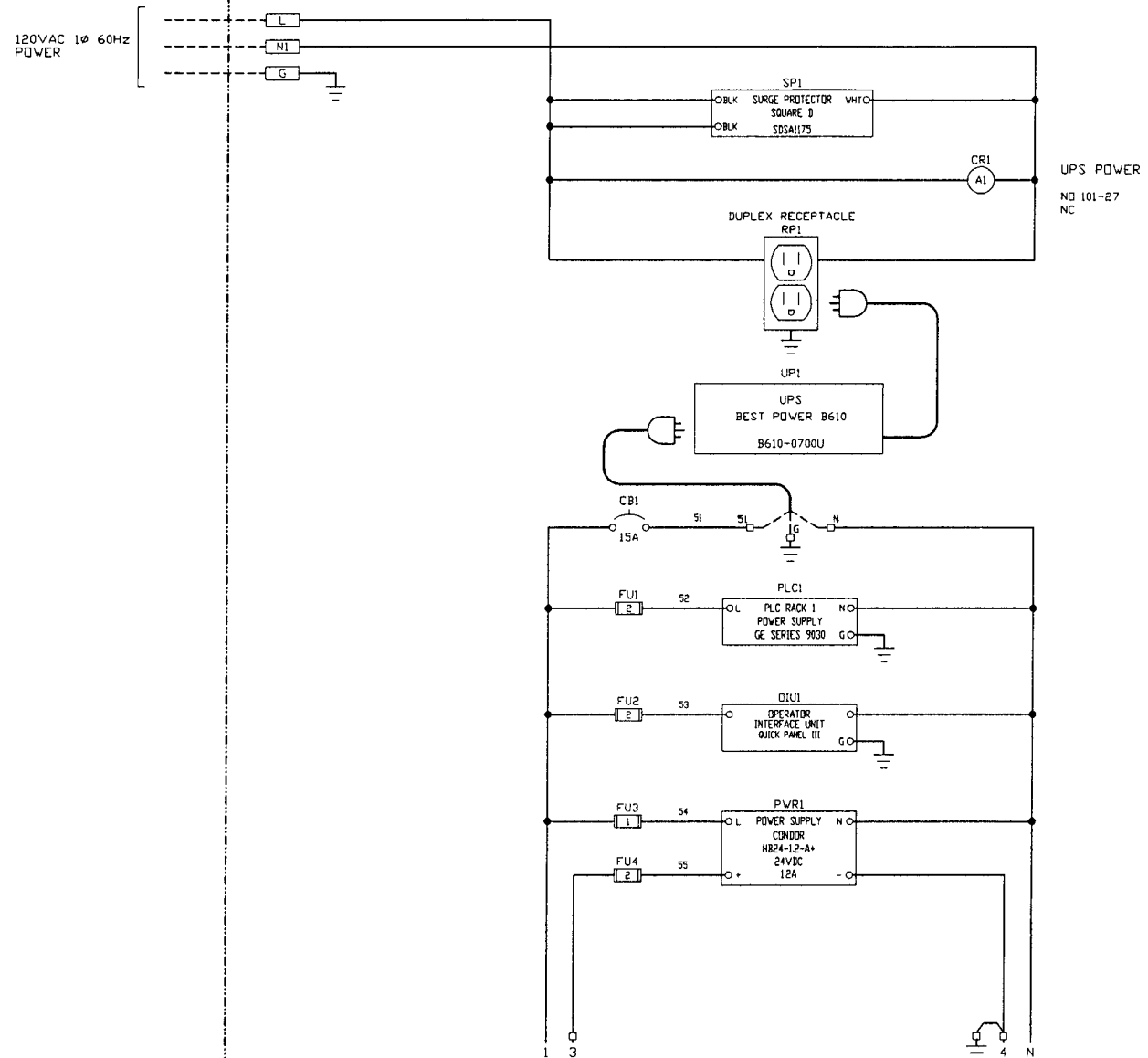
DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEN	
SHEET	01

PROJECT EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
PLC I/O TABLE

PROJ. NO.
1225A
DWG. NO.
008

FIELD OR AS NOTED

CONTROL PANEL



REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

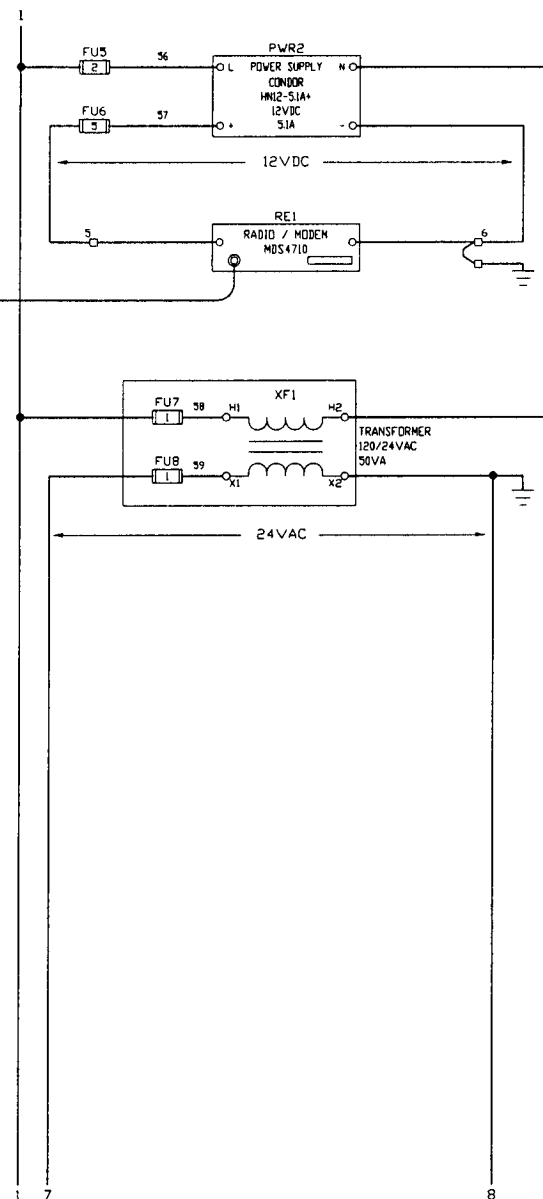
DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEM	LP
SHEET	OF

PROJECT
EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
CONTROL POWER WIRING

PROJ. NO.
1225A
DWG. NO.
100A

FIELD OR AS NOTED

CONTROL PANEL

RE3
ANTENNA
YAGIANTENNA
LIGHTNING ARRESTOR
RE2

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	CK
ENGR	JL
ASSEM	LP
SHEET	OF

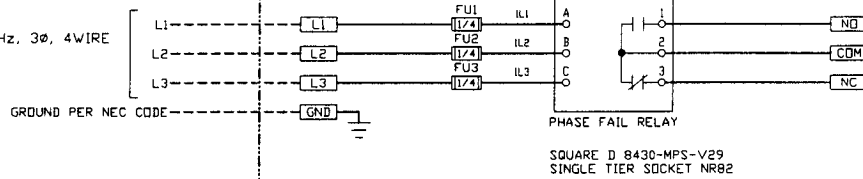
PROJECT
EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
CONTROL POWER WIRING

PROJ. NO.
1255A
DWG. NO.
100B

FIELD OR AS NOTED

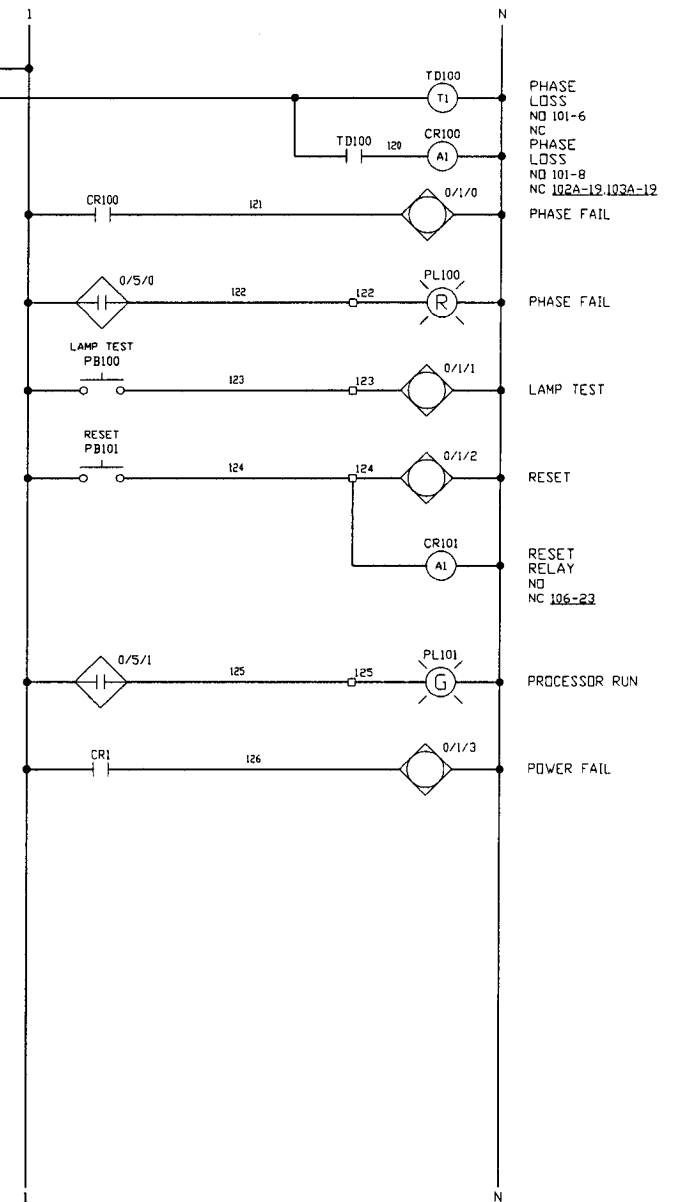
POWER MONITOR PANEL DWG. 1224A3

CONTROL PANEL

460VAC, 60Hz, 3Ø, 4WIRE
POWER

NOTES:

1. FUSE BLOCK: BUSSMAN BC6033P
2. FUSES: LITTLE FNO-R-1/4
3. TERMINALS: AB 1492-CA1, 1492-F1



REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DVN	JA
CHKD	GK
ENGR	JL
ASSEM	GG
SHEET	OF

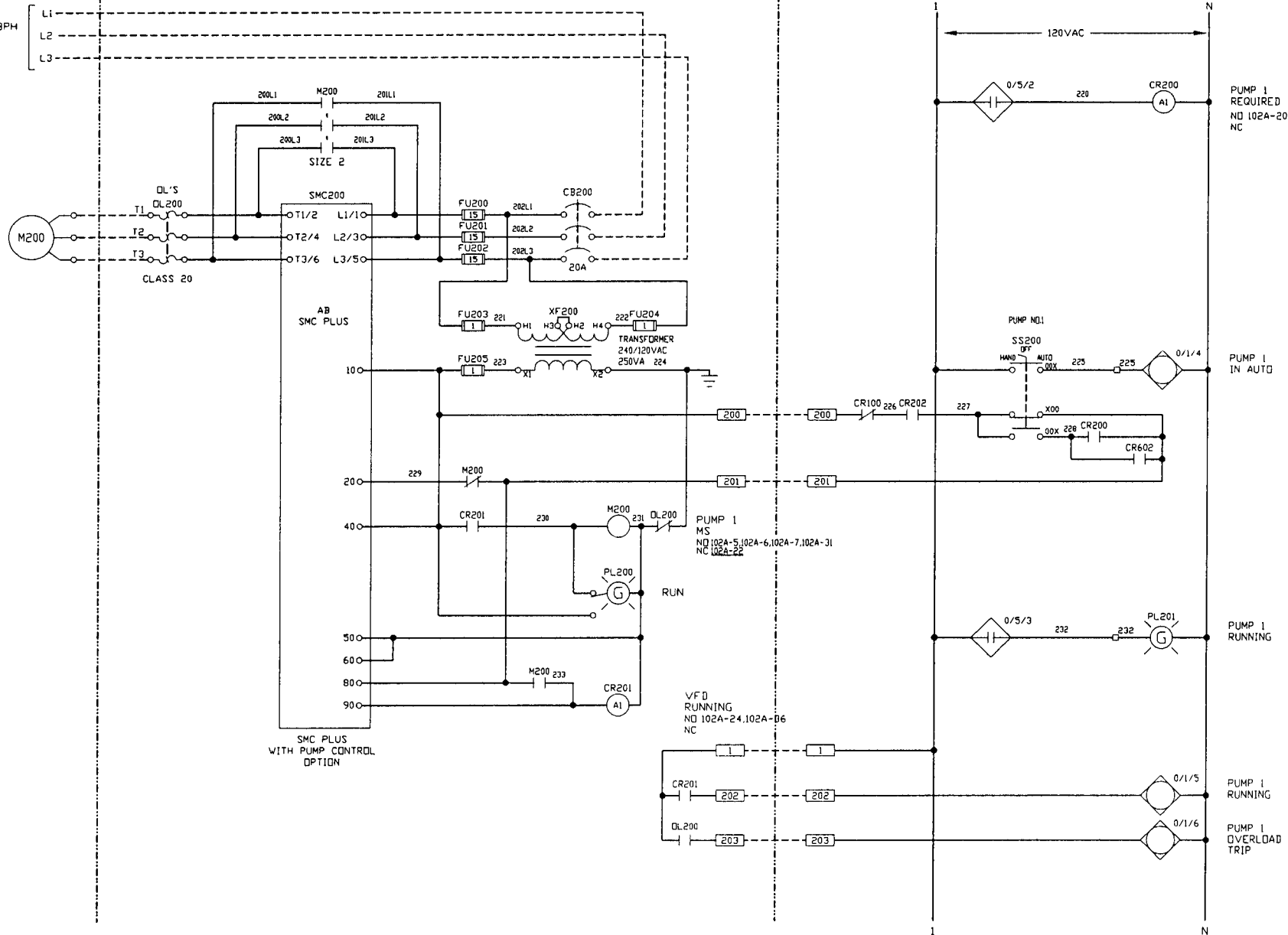
PROJECT
EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
POWER MONITOR WIRING

PROJ. NO.
1225A
DWG. NO.
101

FIELD OR AS NOTED

SMC ENCLOSURE 1224A1

CONTROL PANEL

240VAC, 3PH
4W, 60HZ
POWERPUMP
NO.1
32HP
9.6FLA
480V

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD	GK
ENGR	JL
ASSEM	
SHEET	01

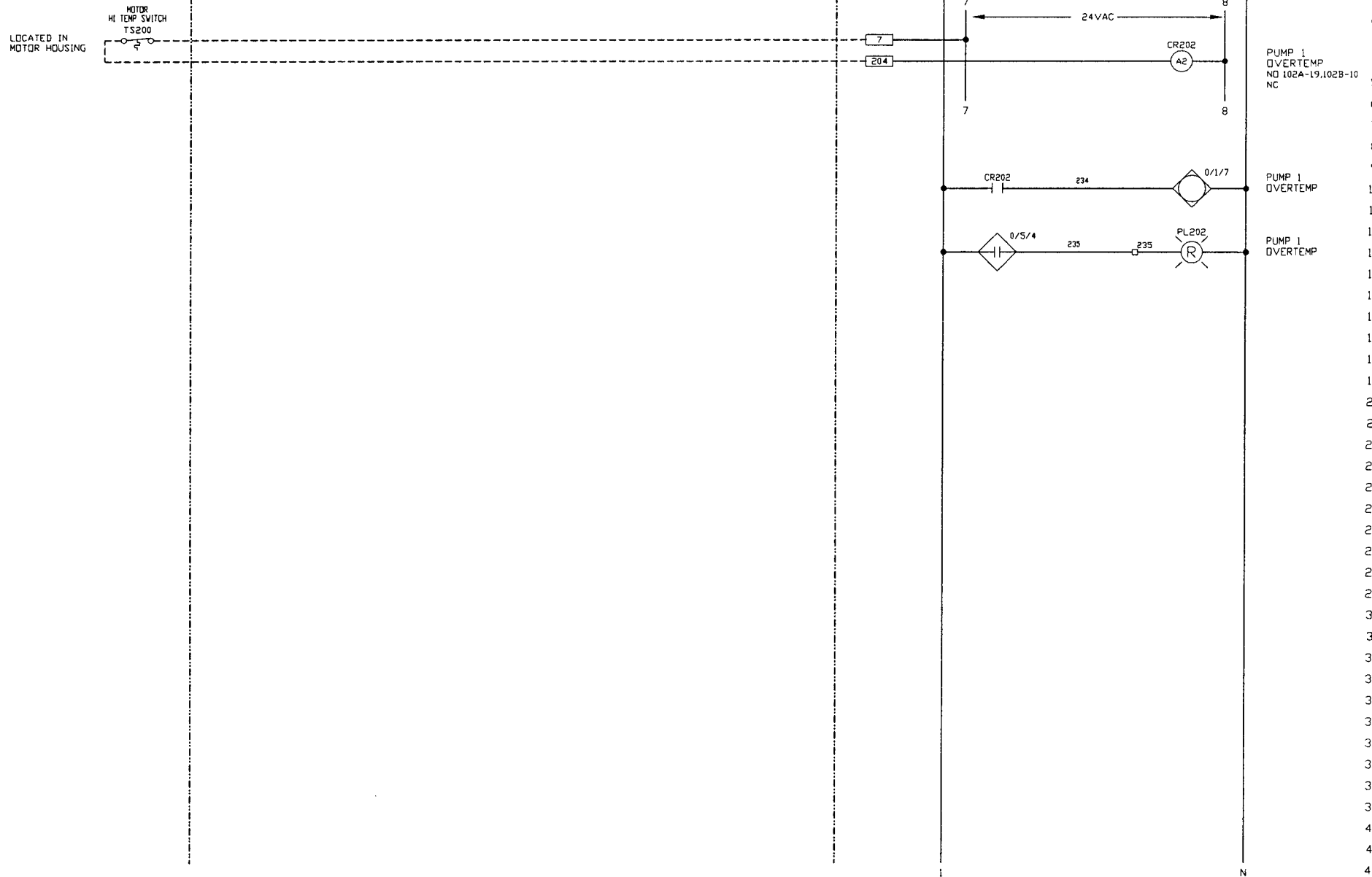
PROJECT EAST GRAND FORKS, ND US CORP
STORM WATER STATION
CONTROL PANEL
SMC PUMP NO.1 CONTROL WIRING

PROJ. NO.
1225A
DWG. NO.
102A

FIELD OR AS NOTED

SMC ENCLOSURE 1224A1

CONTROL PANEL



REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
SMC PUMP NO.1 CONTROL WIRING

PROJ. NO.
1225A
DWG. NO.
102B

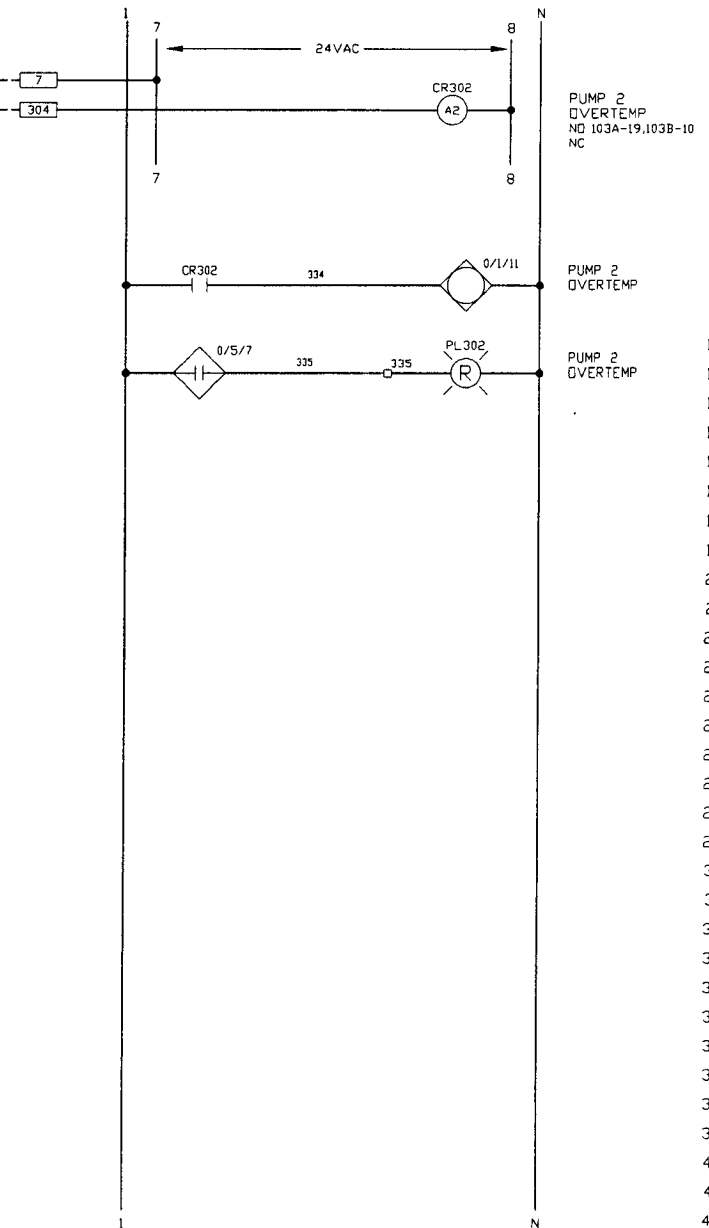
FIELD OR AS NOTED

SMC ENCLOSURE 1224A2

CONTROL PANEL

LOCATED IN
MOTOR HOUSING

MOTOR
HI TEMP SWITCH
TS300



REVISION	
DATE	DESCRIPTION



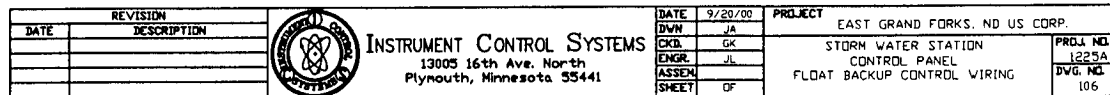
INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEN	
SHEET	OF

PROJECT
EAST GRAND FORKS, ND US CORP
STORM WATER STATION
CONTROL PANEL
SMC PUMP NO.2 CONTROL WIRING

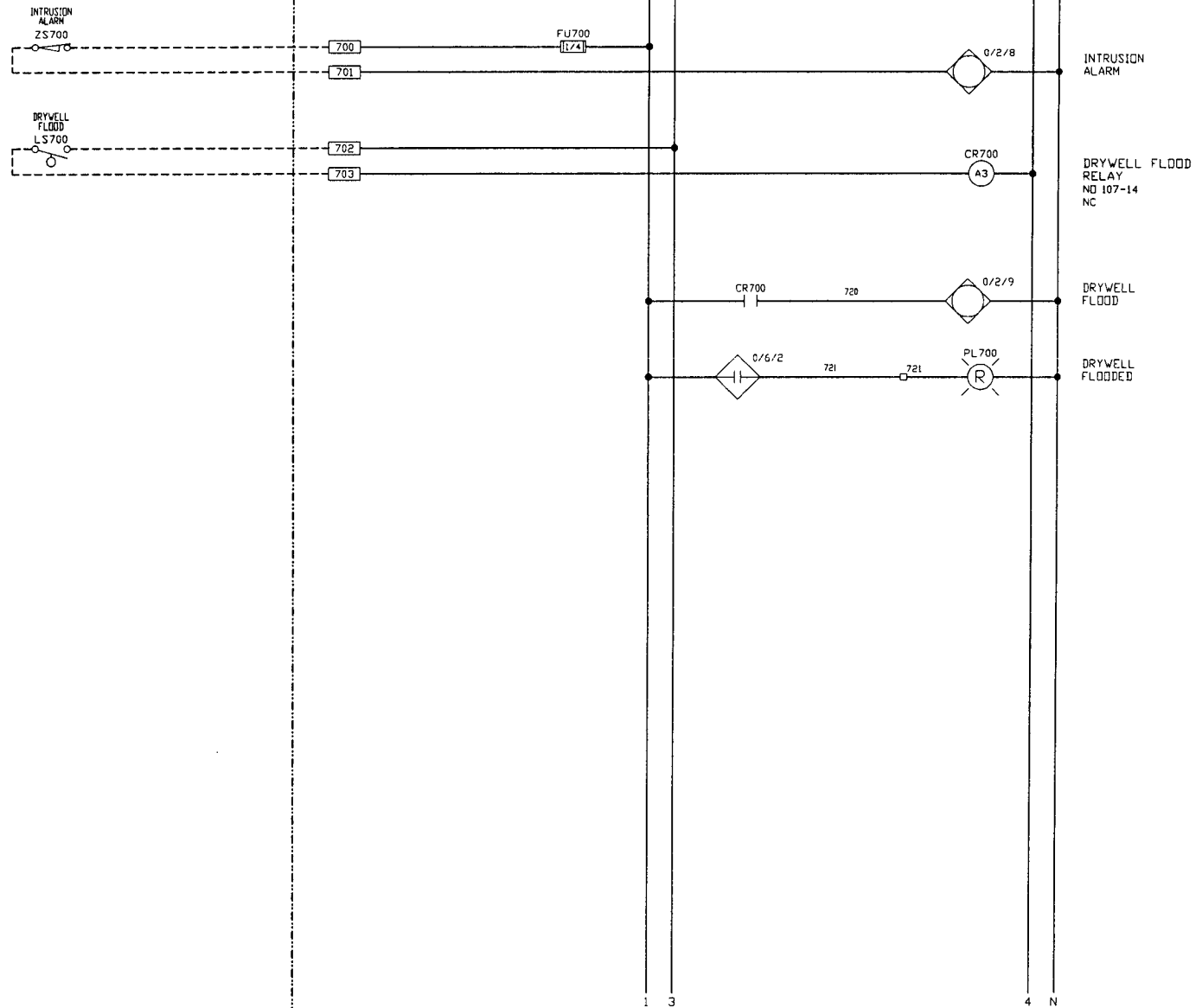
PROJ. NO.
1225A
DWG. NO.
103B

CONTROL PANEL



FIELD OR AS NOTED

CONTROL PANEL



REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13003 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	CK
ENGR	JL
ASSEN	
SHEET	OF

PROJECT
EAST GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
CONTROL WIRING

PROJ. NO.
1225A
DWG. NO.
107